

REMARKS

The present invention is directed to providing ancillary content that can accompany a movie in order to provide a consumer product in the form of a optical disk set to enable profitable sales of a movie beyond its theater release with the auxiliary content to provide an incentive for consumers to purchase not only the movie but to have additional features that would not otherwise be available.

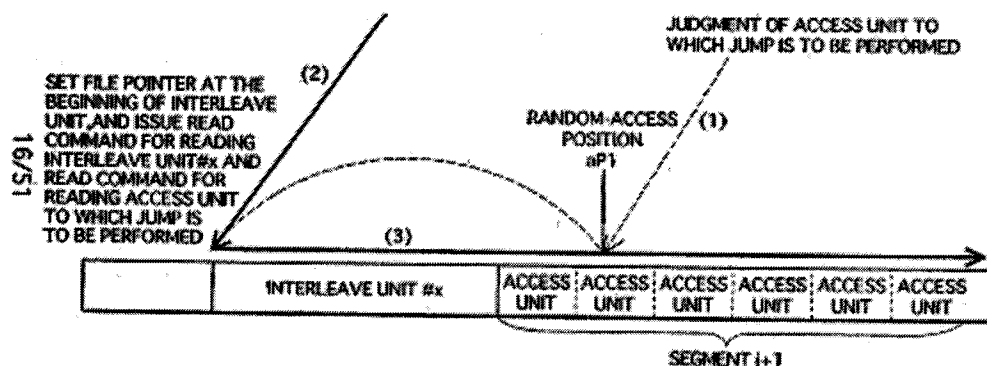
The hardware specification for consumer products such as a DVD player have economic constraints as to the base cost of such products including the available memory size. If it is desirable to include application programs to accompany movie content for example a computer game related to the content of the movie work, it is highly desirable that the adjoining computer game should be in the same operational environment which permits consumers to view the movie.

Thus, our present invention, as defined in our current claims, can provide auxiliary programs such as games that can be recorded on an optical disk together with the movie AV work and the execution of these programs such as a computer game will be in the same operation environment as required to playback the movie. To accomplish this desirable feature, content in the form of a digital stream is divided into specific segments. Control information is provided so that a program to be executed in synchronization with a certain segment in a "live range" or duration in which a library may be used for the application program can be made available so that a particular image can be provided. As a result it is possible to execute a variety of libraries synchronously with the playback of the AV stream for the movie, as shown for example, in Figure 14. Thus, as shown in Figure 14 there could be background scenes (street scenes) that can be used for the background of the computer game with an overlaying of computer graphics

for the foreground in executing the game application. See Page 25, line 11 through Page 26, line 10.

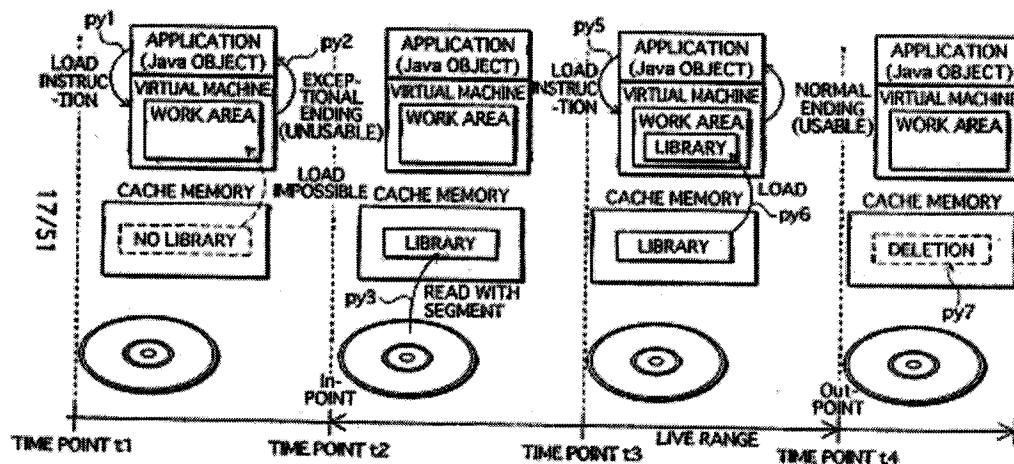
In order for this data to be available for being displayed in synchronization for the movie segment of the digital stream, such data can be recorded in front of a certain segment as an interleave unit.

FIG. 16



As can be seen from Figure 16 above, such a structure enables the possibility to minimize the size of the program or data recorded in the interleave unit that is required to be loaded for the synchronization and this is illustrated in Figure 17 and described on Page 26, line 11 through Page 30 of our Specification.

FIG.17



As can be seen from Claim 1, we divided the AV data content on our optical disk into “n” segments of a digital stream and define specifically a program interleave unit as being recorded on the optical disk in front of the *i*th segment to be played back in the *i*th place. Thus, a library or libraries can be individually stored in the form of interleave units and those libraries can be read to a memory for playback associated with a playback device as shown in Figure 17 above. The library is loaded, for example, in the work area of a Java® virtual machine and can be performed at each of the time points (t1, t2, t3, t4) on the playback time axis of the AV stream shown in Figure 17. In Figure 17, the time point t2 corresponds to the In-point of the live range of our library. When the current playback time point has reached an Out-point of the live range, the library will be deleted from the memory as shown by arrow “py7” in Figure 17. Thus, the interleave unit can include ending time information that indicates at which point in the playback time axis of the digital stream the program or the data should be deleted from the memory. As can be appreciated and as defined in Claim 1, the data to be displayed will be synchronously with the playback of the *i*th AV segment.

As a result of these features, our present invention makes it possible to minimize the size of the program or data required to be recorded in an interleave unit loaded with the synchronization of the playback, for example, of the *i*th segment.

The Office Action contended that Yamane et al. US Patent No. 6,393,196, assigned to the present assignee of this application, is a complete anticipation of Claims 1-37 under 35 USC § 102.

“[T]he dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the prior art reference’s teaching that every claim [limitation] was disclosed in that single reference.’ *Dayco Prods., Inc. v. Total Containment, Inc.*, F.3d 1358, 1368 (Fed. Cir. 2003).

In this regard, the Office Action referred to Col. 1, lines 55-57 and specifically Figure 36 to teach a recording of an interleave unit, with a program having a synchronized playback of data to be displayed synchronously with AV data. The Office Action further contended that the different source data in the AV data stream is synchronized with timing signals after being delayed a specific time period TD by a source stream buffer citing Col. 7, lines 21-24.

Finally, the Office Action acknowledged taking a very broad approach in equating applicant’s earlier Yamane et al. patent with our current claims.

In defining an invention, a difficulty arises in using a two-dimensional verbal definition to represent a three-dimensional invention. To provide protection to an inventor and notification to the public, a proper interpretation of terms utilized in the claims must be adhered to in order to enable an appropriate evaluation of the invention and its scope relative to cited prior art.

Thus, not only should the concept of the invention be found in the prior art, but further, any cited structural elements in a prior art reference should be performing the same function with

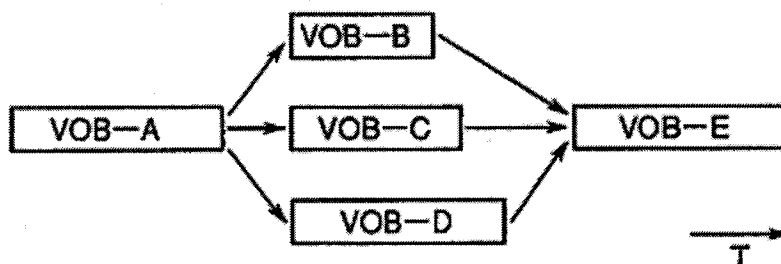
the same technical understanding to a person of ordinary skill in the field as the invention claims at issue.

The Yamane et al. reference is directed to an authoring system to facilitate processing a bit stream carrying video information, audio data, and auxiliary or subpicture data onto a video CD. The origin of this technical disclosure is dated in September 27, 1996.

The Yamane et al. reference noted the drawbacks in incorporating multiplex sections or “alternative video reproduction periods,” see Col. 1, line 61-62, into an optical disk during the authoring period. These alternative reproduction functions could be associated, for example, with parental controls to prohibit R rated scenes from being viewed or providing various different viewing angles in a playback reproduction.

In order to seamlessly reproduce “alternative reproduction” features, the multiplexed digital stream would group the related VOBs so that the user could select one scenario while skipping the other VOBs, based on a flag setting, as schematically shown in Figure 11 as follows.

Fig. 11



Yamane et al. noted that because alternate video reproduction periods could be skipped during the playback of one path of VOBs, a large range of restrictive conditions had to be addressed relating to encoder conditions and video data combinations. If a defective alternate video reproduction period was authored into the content of the master disk, it could create a malfunction and such problems could not be determined until the master disk was completed. If such errors existed, the author or title producer then would have to re-author the master disk starting from the encoding process which could create a significant burden during MPEG-2 encoding.

Apparently authors, to avoid these problems, would use a lower quality initial encoding on MPEG-1 to create an initial master disk and then subsequently if there is no defective alternative reproduction periods, then re-encode into the MPEG-2 protocol to thereby enable the higher video quality based on bit rate and other parameters.

Thus, this was the problem recognized and addressed by Yamane et al.

In *Orthopedic Co., Inc. v. United States*, 217 USPQ 193 (C.A.F.C. 1983), the Federal Circuit set forth a useful guide for determining the scope and content of the prior art. *Orthopedic*, at pages 196-197, also focuses on the “problem” faced by the inventors:

In determining the relevant art. . . one looks at the nature of the problem confronting the inventor.

* * *

[W]ould it then be nonobvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit [the patent application before the Examiner] as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness. (Emphasis added)

The solution taught to a person of ordinary skill in this art for the problem addressed by the Yamane et al. reference was to provide an editing tool with buffers that permitted the delaying of multimedia source data streams to be delayed at specific time period, TD, to enable a sequential MPEG-2 encoding process.

In essence, the alternative video segments or VOBs, audio segments and picture blocks are to be buffered and delayed after the editing information generator, shown in Figure 2, provides a scenario data St7 and “sequential encoding processing is used.” This permits a re-synchronizing of the various elements of the system and enables the multiplexing or interleaving of the grouped VOBs to accommodate an MPEG-2 encoding of the master disk. The time delay information is disclosed on Col. 6, lines 48-62 of the Yamane et al. reference and such a VOB structure is disclosed in Figure 11 above. Figure 36 was further cited to disclose specific interleave block regions for correlation of the VOBs.

Our present Specification addresses this form of prior art multiplexing on Page 37, lines 2-25 as follows:

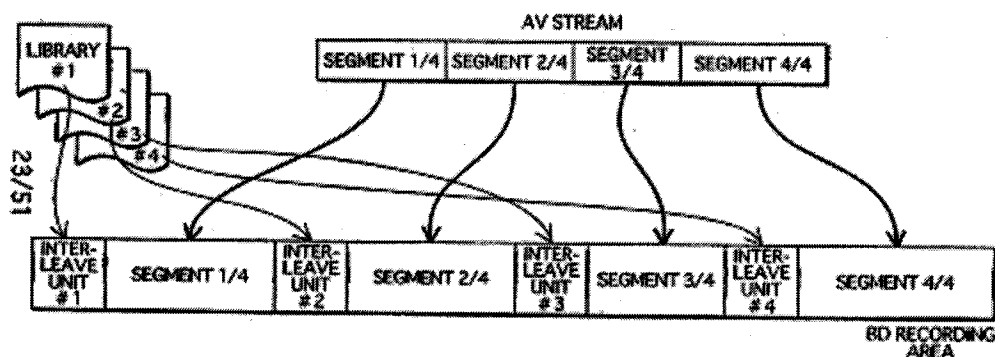
The mentioned interleave recording has a prior technology, called “multiplexing”. Compared to multiplexing to an AV stream, interleave recording shown by the present embodiment has the following advantages. In multiplexing, a library is embedded to the AV stream together with a video stream and an audio stream, and so it becomes necessary to allocate the band for a library, being non-AV data, in advance. In other words, so as to read a library together with video/audio streams, it is necessary to restrain the band originally for the video stream, so as to allocate a band for reading the library. In the case of a movie work, this narrows the band for the image/sound, which degrades the quality of either the image or the sound. So as to allocate an optimal band for libraries in an attempt to prevent the image/sound bands from being narrowed, it then is necessary to multiplex the AV stream for each country’s language. This is a very troublesome work for a movie work production.

As opposed to this, when libraries are stored in a BD-ROM using interleave recording, the libraries are recorded as

independent files. Therefore even if the interleave units are placed between the segments, the interleave units are considered as a continuous file. Accordingly, the multiplexing process for an AV stream generation is another process from that for the library creation, which reduces the load in the authoring stage.

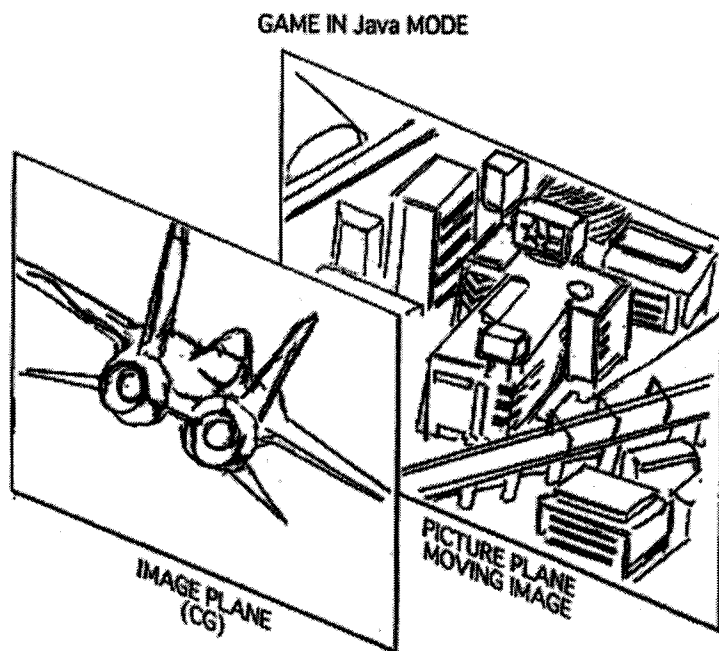
As can be readily determined, our claimed invention is interleaving to provide libraries of independent files and this permits us to utilize a program such as a computer game, wherein VOBs from the movie work can be interleaved with the program data for a game play as shown in Figure 23.

FIG.23



Graphically, advantages of our present invention can be seen as follows.

FIG.21



The generation of the image plane of a computer game is provided by one or more libraries that can be stored as independent files and can be interconnected as a continuous file within set time periods to enable the generation and play of the game, and afterward libraries are deleted. In Figure 21, the moving image is the background, for example, of a city photographed from the sky taken from the AV movie work. The foreground is a computer generated airplane generated from computer graphics where, for example, the attitude and direction can be controlled by the user operation creating a realistic flight simulation for rendering of the computer graphics in a Java® mode while being synchronized with the playback of the AV stream.

The Office Action asserted that the description in Claim 1 of an interleave unit including one of (a) a program to be synchronized with the playback of the i th segment and (d) data to be

displayed synchronously with the playback were taught by Yamane et al. However, as mentioned above, AV data is synchronized with timing signals to accommodate the delay time TD that is required by the source stream buffer in the authoring procedure.

Our Claim 1 is directed to the finished and final optical disc that is provided to the consumer with enhanced features including synchronized programs such as computer generated graphic games. The problem addressed by the Yamane et al. reference is authoring of a continual stream of MPEG-2 data streams that facilitate the multiplexing encoding process of the MPEG-2 system. It does not teach nor suggest a program(s) of our claims. As described in Col. 8, lines 51-55, the Yamane et al. system encoding parameter data and start stop timing signals permits the system encoder to apply a “multiplexing coding process to generate a time edited unit (VOB) St35.”

We are targeting a program such as various libraries that permit, when combined, the generation of a computer generated game and collectively are one continuous file as opposed to a sequential and alternative VOBs shown in Figure 11 above of the Yamane et al. disclosure.

Yamane et al. states that a video signal St1, a subpicture signal St3 and an audio signal St5 are encoded in accordance with scenario data St7, in synchronization with timing signals St9, St11 and St13 that respectively correspond to a generated video, subpicture and audio. In other words, Yamane et al. merely states that a stream and a corresponding encoding signal are in synchronization with each other.

In contrast, the invention of Claim 1 discloses that, out of the segments included in the digital stream, an *i*th segment is in synchronization with an interleave unit that is recorded in front of the *i*th segment.

Finally, the interleave units of Yamane et al. are different from those of Claim 1.

The interleave units of Yamane et al. (Col. 31, lines 42-52) are VOBs constituting multi-angle scenes, and are alternatively arrayed. Reproduction of these interleave units in the specified path is executed seamlessly. That is to say, out of a plurality of interleave units, one path is reproduced. This alternative reproduction realizes multi-angle scenes.

In contrast, according to the invention of Claim 1, an interleave unit and a segment following the interleave unit are executed or played back in synchronization.

The items targeted for synchronization as well as the interleave units pertaining to Yamane et al. are different from those pertaining to the invention of Claim 1, respectively. Therefore, the invention of Claim 1 can not be anticipated by Yamane et al. In addition, according to the invention of Claim 1, the interleave units are utilized to perform high-speed execution of programs which would not have been obvious to a person of skill from the Yamane et al. reference.

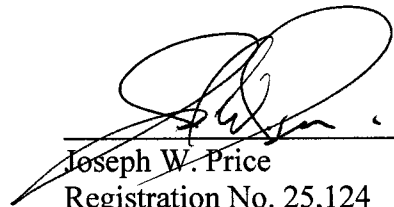
Claims 15 and 35-37 are respectively directed to a playback apparatus, a playback program, a playback method, and a recording method corresponding to Claim 1. Claims 2-14 depend from Claim 1, and Claims 16-34 depend from Claim 15. Therefore, none of our claims should be anticipated by Yamane et al.

It is submitted that the present application is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of the case, the undersigned attorney can be contacted at the listed telephone number.

Very truly yours,

SNELL & WILMER L.L.P.



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